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COOPERATION BETWEEN PUBLISHERS AND UNIVERSITY LIBRARIES

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Introduction

As a visitor from the upside down part of the world, 15,831 kilometres away, I should begin this morning by putting the Queensland University of Technology or QUT and my role at that University into perspective.

Australia has 36 universities, ranging from those established in the mid nineteenth century, to several which were established in the late 1980s, usually from former colleges. QUT is the seventh largest university in Australia and the second largest in the State of Queensland. It has 23,000 students, 2,000 teaching and general staff, five campuses across a distance of a little over 100 kilometres, and a library service at each one of those five campuses.

At QUT the position of Director of Information Services involves responsibility for the University Library, the Department of Computing Services, and four distinct units which support teaching, especially educational technology and distance education.

QUT Library

In Australia, the academic year runs from January to December. The University financial year runs through the same months. In 1992 QUT Library spent \$5.2 million on library acquisitions. This is approximately 6 million Deutschmark, 3.5 million US dollars, 2.2 million pounds sterling.

Approximately half our expenditure is on periodicals, in both machine readable and print forms, with a significant pattern of purchasing from overseas suppliers. As a university of technology we trade heavily with scientific publishers. Our main suppliers are based in Europe and the United States. Our supply from these two areas is approximately equal. The principal long term problem in the management of resources at QUT Library is the cost of library acquisitions. This is of course a problem that we share with libraries in other universities, not only in Australia but around the world. It is more keenly felt in universities of technology because of the average cost of publishing in the science and technologies.

None of what I am saying here will be new to any of us here today. But it is sobering always to reflect on the size of our problem, before we come to discuss some of its complexities and some of its possible solutions. This figure shows the size of the problem.

| Year | Percentage Change in | |
|------|----------------------------|------------------------|
| | CPI | Periodical Price Index |
| 1986 | 1.9 | 8.9 |
| 1987 | 3.7 | 9.9 |
| 1988 | 4.1 | 9.1 |
| 1989 | 4.8 | 9.5 |
| 1990 | 5.4 | 9.5 |
| 1991 | 5.5 | 11.7 |
| 1992 | n/a | 12.6 |

Figure 1. Percentage change in periodical prices compared to CPI (US) 1986-92.

This is an analysis of periodical prices in the United States over the period 1986-1992 showing periodical price changes compared to average consumer price changes. You will see that in every year the price of periodicals was usually twice and sometimes well over twice as large as the consumer price index.¹

In Australia this trend has been exacerbated in the 1980s by exchange rate fluctuations. Because Australia is a small country its economy is relatively vulnerable, and its currency subject to fairly major changes against the major currencies with which Australia trades. In the year 1986, when the Australian dollar was floated, it fell in value by over 20%. The combined effect of this with the already high inflationary pressures in the cost of published information meant that in one year alone my library experienced an inflation rate of 38% for periodicals purchasing.

The Library within the University

If one steps outside the immediate concerns of the library administrator for a moment and considers the "problem of the library" from a university perspective, it is figures like 38% inflation which immediately draw attention. This is particularly true when the cost trends for other goods and services which a university requires are analysed. The value for money gains that have been made in the general area of information technology usage run in precisely the opposite direction. The computing power that my university can purchase to support administrative, communication, and general academic and research requirements in the 1990s is hundreds of times cheaper when thought of as storage/performance per dollar, than it was ten years ago. But, due to complex reasons which have received reasonable analysis elsewhere, formal and "old fashioned" publishing has moved in precisely the opposite direction.

This tends to attract attention, especially over several years. From my point of view the Library, with a budget overall of about \$11 million can purchase less and less of the resources it is supposed to supply each year, whereas the Computing Services Department, with a budget of \$9 million can buy more for the same dollars.

In a country like Australia, the growth of new document delivery systems, combined with the relentless pressure on acquisitions budgets, leads to the tendency for the nation's total bibliographic intake to reduce. This trend has also been noted in other countries such as the United States. In Australia the peak body for library cooperation is the Australian Council of Libraries and Information Services. I am currently the President of that Council, and high on our agenda is the concept of the "Distributed National Collection" in which responsibility for the coverage of published output by Australian libraries is shared in different library sectors. However, the development of the idea of a shared responsibility to maximise the nation's library resources, and the actual pressures leading librarians to make choices at their institutional level, are contradictory influences.

Nevertheless the sharing of "pain" in the reduction of the intake of traditional library resources, combined with more assiduous usage and relevance studies than might perhaps have been contemplated in the past, are necessary responses to the pressures which I have just described. In Australia, because of its history of coping with isolation and distance, library collaboration is fairly high, as for example in the case of a uniform system of charging for interlending which has been in use now for fifteen years.

Optical Disc Technology, the Rise of the Internet and the Illusion of Electronic Publishing

During 1990 Australia witnessed the development of an academic and research network similar to that being developed or already installed in other countries. In our case the name of this network is AARNet, (which stands for the Australian Academic and Research NETwork), and via a trans-pacific link universities in Australia are automatically connected to the users of other networks, such as JANET, BITNET, EARN, and so on. For the sake of convenience the services delivered by use of academic data communication networks is often referred to in Australia today as simply "the Internet". Along with this development much interest and activity has occurred investigating the potential for the use of such networks for alternative forms of scholarly communication.

Of course interest in such alternative forms has not been confined to waiting for the Internet to develop. Everyone here knows of the intense interest in the possibilities for laserdisc based publishing and distribution, for example.

Before I continue to talk more about this I think it is important to define terms. There is for me a strong difference between electronic publishing and "electronics

in publishing". The latter can be defined as the take up of various applications of IT in the production of material which is essentially a replication of something previously and concurrently published in its traditional paper format.

Electronic publishing is, on the other hand, and for the purpose of this paper, the complete replacement of paper based publishing, with electronic submission, review, editing, subscription and distribution of the content of traditional scholarly communication containers.

Although this concept has been with us for some years as a possibility, it has not emerged as of mid 1993, as a serious alternative.

The so called "electronic journal" now listed on the Internet, is overwhelmingly not the kind of journal to which scholars and publishers give sanction and authority in terms of the transmission of important information and in terms of scholarly validation.

I labour this point because in Australia there has been a tendency on the part of some librarians to become quite focussed on "the E Journal" without understanding the lack of equivalence, at least to date.

So we should ask why, despite the availability of the technology, has electronic publishing *not* really developed. To answer this, I think it is worth asking some fundamental questions about what the principal stakeholders (interest groups) really want. So let us now turn to these stakeholders.

What libraries want

First, to the familiar ground of libraries. What libraries want, I think, is to provide appropriate services of ever improving effectiveness and efficiency, using whatever technologies are appropriate and affordable, and developing and enhancing their productivity in so doing. Therefore, their primary pre-occupation is with the economic tensions which I described before. Our main strategic areas for attention include the pursuit of faster and more efficient acquisition processes, the development of genuinely distributed and accessible information services, available 24 hours a day, seven days a week, and the provision of the appropriate content related expertise to help our primary clientele find their way round an increasingly complex information world.

What publishers want

In describing what publishers want it is tempting to simplify and say that for the majority of publishers who have gained control of scientific and technological communication in particular, their main requirement is to maintain, if not improve, profitability.

Lest there be any doubt about this profitability it is well worth considering the case of the title "Cellular and Molecular Biology". In January this year a one page item appeared in the journal "Science"² which referred to a battle which had developed between Pergamon Press Pty Ltd and the editor of one of its journals, viz "Cellular and Molecular Biology". To put it simply the editor and Pergamon Press had a dispute about this journal, the effect of which was to produce two versions. Of course, as well as individual libraries being confused, indexing services such as the National Library of Medicine were unclear about which was the authorised version. This went on for ten years, but what I find interesting is that when Pergamon offered the editor a price for full ownership of the title the figure was 75,000 pounds sterling, or something over 200,000DM. Anyone in any doubt about the profitability of scientific journal publishing should consider this fact.

Publishers of course have their own concerns. They are naturally worried that the possibilities made available by the Internet will eventually erode their market and that the librarian's dream of a direct relationship between scholar and reader on international research networks, displacing the conventional vehicles for commercial publishing, will one day be largely realised. So developments such as the TULIP project are not surprising.

For anyone not familiar with it, TULIP (The University Licencing Program) is a cooperative research activity testing the delivery and use of journals in a networked environment. Its three objectives are to determine technical feasibility, organisational and economic models and possibilities, and user behaviour under these changed situations. Its participants are various US based universities, including IATUL members, and ELSEVIER.³

The question of cooperation between publishers/booksellers and libraries contains with it an essential economic tension. Libraries in our universities are decreasingly able to purchase the same proportion of world published output as they could previously afford, and this is an ever worsening problem. At the same time publishers seek to protect their margins, and in doing so quite legitimately see themselves responding to continually increasing pressures among research and academic communities to publish and publish and publish.

In this complex situation then, I suggest the reason that the E Journal has not really taken off is due at least to the fact that

- there is no real economic incentive yet for publishers to change what they do;
- libraries do not have the influence and control necessary to change scholarly behaviour.

What scholars want

The critical point then, to me, in understanding the future of possible cooperation between libraries and publishers is to understand the fundamental motivations that cause our scholars to publish in the first place. Don Schauder will be saying more about this issue later. Broadly speaking there are two reasons for being published in scholarly journals. The first involves career recognition and development, and the second involves validation and verification of research findings among one's peers. These may, of course, overlap. Of these two motivations the first behaviour may be characterised as having substantially taken root and rapidly developed in the last fifty years, and the second might be regarded as longer term and more durable. Let me illustrate this by way of example.

Just before Christmas in 1938 German scientists Lisa Meitner and Otto Frisch were walking in the country in Sweden just north of the city of Goteburg. They were discussing some recent and inexplicable findings which had emerged from some work they had been doing in Germany on the bombardment of atoms of uranium with neutrons. The moment of understanding of the significance of their work came when the aunt and her nephew sitting on a log with a pencil and envelope suddenly realised the reasons for the behaviour of the nucleus. Under bombardment it was being split into two entities of almost equal mass, rather than being fragmented or chipped as previously thought. An associated finding was that the reasons elements higher than uranium on the periodic table had eluded detection was that the atomic nucleus had reached the point of inherent instability. Cautious at the extraordinary consequences of their discovery, it was discussed further after Christmas using the long distance telephone between Stockholm and Copenhagen. Still cautious they passed their results in front of Neils Bohr who was about to leave for the United States.

But it was not until the findings were published as a note in the Letters to the Editor of Nature in February 1939 that Frisch and Meitner could consider that their work was formalised and valid. It is doubtful that either of them were thinking of their careers. Their determination was simply to see that their findings were validated, that is, could be both perceived and accepted by their peers around the world so that they then had the satisfaction of being recognised for their contribution to the store of knowledge in this area.⁴

If we look at the way that the international research networks are currently being used for the electronic communication of research findings, we find plenty of examples of "informal communication" and few or no examples of formal and refereed communication. While it is true that electronic mail, some things that we might call electronic journals, electronic newsletters and computer conferences are becoming more frequently used, we need to be clear about the kind of communication that they represent. I think it is clear that they represent Meitner and Frisch talking on a log, speaking to each other on the telephone, and sharing drafts of a paper. They may even represent the presenting of that draft to others for comment, ie as with Neils Bohr. But there is no equivalent of that publication

in the journal Nature which validates and marks the birth date in the sense of shared knowledge of the concept of atomic fission.

This point is crucial. Unless the equivalent of that validation process is developed on the international networks there will be no major change in the conventions of publishing.

So it is crucial for libraries to attempt to change the culture of scholarly publishing.

But what do we find when we look at what motivates our scholars? The overwhelming proportion of refereed publication is difficult to link to the concept of the unique discovery or the high profile validation of findings. We know that large numbers of journal articles are rarely read by other than those who wrote them. At the Scholarly Communication Conference in Australia in April this year, an editor with 25 years experience of refereeing mathematical journal publishing declared that there was no doubt in his mind that the standard of both refereeing and publication in his field had declined over a quarter of a century, due to various pressures on referees' time, among other things.

It seems to me that libraries face a two-fold challenge. On the one hand we must engage with our own scholarly communities in discussion about alternatives to the conventions of scholarly communication. The most positive evidence of this to date has occurred in North America, where groups such as the Coalition for Networked Information are now in their fourth year of operation.

On the other hand the university library must also be committed to the exploration of new means of solving apparently irreversible economic pressures, but must also be prepared to cooperate with publishers in major new initiatives such as TULIP and Red Sage.

Our starting point in such cooperative ventures must be to offer the prospect that both libraries and publishers have a vested interest in reducing costs, publishers in terms of their traditional publication costs and risk taking which is significant, and libraries in terms of the total amount paid for scholarly information.

Although the library's traditional role is apparently challenged by electronic distribution, the fact is that from a university administrator's point of view it will still be necessary to have one organisation within the university responsible for liaison with publishing interests. Therefore it is not just desirable but imperative for university libraries everywhere to take a lead in suggesting cooperative and collaborative discussion with publishers. These are major policy issues and cost risks which must be addressed. In the complexities which face us, libraries must remain quite clear about the motivation and reward system which is the present day context for scholarship and research, or we will fail to develop the support and momentum we need to drive change to the advantage of our university communities.

Endnotes

1. Library Journal, April 1992; p 59.
2. Science, 259, 22 January 1993; p 453.
3. A brief description appears in the December 1992 issue of the Quarterly Newsletter of the International Council for Scientific and Technical Information.
4. These events are described by Richard RHODES, The Making of the Atomic Bomb, NY, Simon & Schuster, 1986; pp 256-264.